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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
THAKUR, VIREN A	

ART UNIT	PAPER NUMBER
1761	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,595	ARORA ET AL.	
	Examiner	Art Unit	
	Viren Thakur	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/13/05; 11/10/04; 6/30/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The above specified claims recite the limitation "substantially air-tight manner" on Page 13, Line 27 and Page 15, Line 27. It is unclear as to what degree of sealing provides a substantial air tight manner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 5-10, 13-14, 18-23, 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (U.S. 2002/0027173 A1).

Polifka teaches an invention that performs the process of introducing a material into an apparatus that heats, grinds and dries said material through the use of compressed air into an enclosed conical shaped space to grind a particulate material (Paragraph 0006; Paragraph 0010; Page 10, Item 23a through 23e) using circular air vortex flow (Paragraph 0006; Figure 2, Not labeled, see near item 12C). As recited in Claim 1 and 14, Polifka further teaches said apparatus comprising an upper cylindrical enclosure (Figure 2, Item 12) and an adjoining conical shaped lower enclosure (Figure 2, Item 14) into which compressed air is injected (Paragraph 0007), for the purpose of grinding. Polifka also teaches that said air flow is in the form of a circular vortex that extends through the upper cylindrical chamber and the lower conical chamber (Paragraph 0010) and is exhausted through said upper chamber (Paragraph 0032; Figure 2, Item 92). Since Polifka teaches that said exhaust pipe is

positioned to be in communication with the air flow within the cylindrical chamber, it is further obvious that the air flow containing moisture released during the drying process will be exhausted through said pipe, as recited in Claim 13 and 28 (Paragraph 0032; Paragraph 0043; Paragraph 0050) Polifka further discharges said ground material through an orifice at the bottom of the conical chamber (Figure 2, Item 30B). Additionally, it is interpreted that the invention as taught by Polifka further teaches heating such as roasting, since it is disclosed that the compressed air can reach temperatures between 40F and 900F (Paragraph 0038), which covers the range of 300 to 500F and 375 to 425F, as recited in Claims 7,8,20 and 21. Furthermore, with regard to Claims 1 and 14, Polifka teaches that the invention as disclosed can be modified for both industrial uses or downsized for household applications (Paragraph 0042) and further for the purpose of grinding and drying grains (Paragraph 0044), pasteurization processes (Paragraph 0043) and extraction processes (Paragraph 0045). As recited in Claims 5, 6, 18 and 19, Polifka teaches that the heated air can be pressurized between 10 to 600 pounds per square inch which covers the range 10 to 100 psig and 15 to 60 psig. Furthermore, as recited in Claims 9,10,22 and 23, Polifka discloses a volumetric flow rate of the compressed air of between 5 to 12,000 cubic feet per minute, which covers the range 1000 to 10000 cubic feet per minute and 1500 to 3000 cubic feet per minute. As recited in Claim 25, Polifka teaches a heated air flow injected into the cylindrical enclosure in a tangential direction with respect to the inner walls of the cylindrical enclosure

(Figure 3, Item A; Paragraph 0026). As recited in Claim 27, Polifka discloses wherein the upper enclosure has a diameter between 1 and 10 feet (Paragraph 0060) and the lower enclosure comprises a truncated conical shape (Figure 2, Item 14) having a maximum diameter size where the lower enclosure adjoins the cylindrical enclosure (Figure 2, Item 40) and the maximum diameter of the lower enclosure is substantially the same as the diameter of the cylindrical enclosure (Paragraph 0065; Figure 2, Item 40).

Polifka does not disclose the explicitly green coffee beans introduced into the heated air chamber, but does disclose the invention for comminuting, heating and drying edible foodstuffs, as discussed above.

Therefore, it would have been expected for the device of Polifka to dry, roast and grind coffee as claimed since the device disclosed by Polifka is capable of conducting such operation. As Polifka teaches that agricultural product can be processed through the device, coffee beans, falling within such a category would have been successfully processed as claimed.

6. Claims 1, 5-10, 13-14, 18-23, 25 and 27-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (US 2002/0027173 A1), and further in view of Enomoto (U.S. 5,307,733) and Tidland et al. (U.S. 5,958,494).

Polifka discloses an apparatus that performs the process of simultaneously heating, grinding and drying a material that can be a food product, as discussed above.

Polifka does not disclose the explicitly green coffee beans introduced into the heated air chamber, but does disclose the invention for comminuting, heating and drying edible foodstuffs, as discussed above.

Enomoto teaches a coffee maker that roasts and grinds coffee beans without the use of separate appliances (Column 1, Line 54-60) for the purpose of shortening the length of time required for using freshly ground coffee beans for brewing coffee (Column 1, Line 41-52; Column 1, Line 66 to Column 2, Line 1).

Tidland et al. teaches a coffee bean roasting apparatus that incorporates a cyclonic air flow (Figure 6) to roast said coffee beans and then exhausting said air through a flue (Column 2, Line 29-31) for the purpose of providing a low pollutant and energy efficient roasting system that produces more consistent coffee bean roasts (Column 2, Line 12-14).

Therefore, based on the teachings of Enomoto and Tidland it would have been obvious to a person having ordinary skill in the art at the time the invention was made to roast, grind and dry coffee beans as taught by Enomoto and Tidland for the purpose of providing a shorter length of time to make freshly ground coffee beans and to provide a low pollutant and energy efficient roasting system that produces more consistent coffee bean roasts. Such a modification will save the user time and money since a two or three step process can be performed through the purchase of one machine.

7. Claim 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (US 2002/0027173 A1) in view of Enomoto (U.S. 5,307,733) and Tidland et al. (U.S. 5,958,494) as applied to Claims 1, 5-10, 13-14, 18-23, 25 and 27-28, above and further in view of Pultinas, Jr (U.S. 4,591,508).

With regard to Claims 2 and 15, Polifka in view of Enomoto and Tidland et al. disclose a method for roasting, drying and grinding coffee beans, as discussed above. Since Polifka in view of Enomoto and Tidland thus disclose drying it is known that this includes removing the moisture content from within a foodstuff. Nevertheless, it is also obvious that although a range of between 3 and 5 percent has not been explicitly disclosed, such a range can be obtained depending on the temperature of the compressed air as well as the resident time within the chambers.

While it is well known to reduce moisture during drying and roasting, Polifka in view of Enomoto and Tidland does not explicitly disclose said moisture content after roasting, drying and grinding to be between 3 and 5 percent.

With regard to Claims 2 and 15, Pultinas Jr. discloses a process for roasting and grinding green coffee beans (Column 3, Line 39-57) wherein said processed coffee beans contain moisture content of between 3 and 6 percent, which covers the range 3 to 5%. Pultinas Jr. teaches the necessity of maintain a moisture content within this range for the purpose of preventing staleness when brewed and brittleness during handling and packaging (Column 4, Line 66 to Column 5, Line 6).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Polifka in view of Enomoto and Tidland et al to ensure a moisture content of between 3 and 6 percent, as taught by Pultinas Jr. for the purpose of ensuring the stability and freshness of the ground coffee product. Such a modification ensures that the ground coffee is not stale when brewed or brittle during process handling and packaging.

8. Claims 3, 4, 11, 16, 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (US 2002/0027173 A1) in view of Enomoto (U.S. 5,307,733) and Tidland et al. (U.S. 5,958,494) as applied to Claims 1, 5-10, 13-14, 18-23, 25 and 27-28, above, and further in view of Reeves et al. (U.S. 3,821,430).

With regard to Claims 3, 4, 11, 16 and 17, Polifka in view of Enomoto and Tidland et al. disclose a method for roasting, drying and grinding coffee beans, as discussed above. Since Polifka teaches grinding, it is obvious to a person having ordinary skill in the art that the particle size of the ground coffee beans depends on the resident time within the grinding chamber: a finer coffee bean requires a longer resident time while a coarser coffee bean requires a shorter resident time. Additionally, this also depends on the moisture content of the green coffee bean and the temperature used for roasting and drying. Since Polifka teaches discharging a foodstuff from the lower orifice of the conical

chamber, it would have been obvious that the discharge requires collection in some kind of container.

Nevertheless, Polifka in view of Enomoto and Tidland does not disclose a particle size of between 0.1 to 1 mm or a particle size of between 0.1 to 4 mm. Additionally Polifka in view of Enomoto and Tidland does not disclose screening the discharging coffee beans for particle size; re-introducing coffee beans into the upper cylindrical chamber to further reduce the particle size of said coffee beans

Reeves et al. discloses a process for producing instant coffee composed of two different coarse grains using a freeze dried component and a roasted agglomerate. Reeves et al. teaches using sieves (Column 2, Line 11-20) and a recycling stream to further reduce the particle size of the coffee bean extracts (Column 2, Line 50 to 54) and measures the particle size using 12, 20 and 40 mesh screens (Column 6, Line 21-30). This corresponds to particle sizes of between 0.42 mm and 0.84 mm, which is within the range of 0.1 mm to 1 mm and the range of 0.1 mm to 4 mm. The invention of Reeves et al. further discloses that said particle size should be a substantial majority, approximately 70 percent (Column 6, Line 25) or at least the particle size should be consistent within the agglomerate to within 50 percent (Column 6, Line 30). Additionally, Reeves et al. teaches recycling coarser particulate material to ensure the reduction of undesired particle sizes of ground coffee (Column 6, Line 31-38). Such a process produces a soluble coffee product that provides an agglomerate

of freeze dried component with a roasted component that has the strength to withstand abrasion and segregation and therefore preserving the blend of a quality extract with more economical coffee beans (Column 1, Line 11-16 and Line 32-36).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Polifka in view of Enomoto and Tidland to grind the coffee bean to within a particle size of 0.4 mm to 0.8 mm as taught by Reeves et al. for the purpose of ensuring that if blended with other coffee beans, such a blend has the strength to withstand abrasion and segregation and therefore preserving the blend of a quality extract with more economical coffee beans. Such a modification provides a quality tasting but more economical coffee bean. Nevertheless, it is further obvious that the particle size of the ground coffee bean is wholly dependent on the resident time within the grinding chamber, as well as the preferences of the user: a finer coffee bean requires a longer resident time while a coarser coffee bean requires a shorter resident time. Additionally, modifying Polifka in view of Enomoto and Tidland as taught by Reeves et al. further teaches that it would have been obvious that if a consistent coffee grind is required, the finer coffee grind will be sieved out, while the coarser coffee grind will be recycled back to the grinding chamber for further reduction of the particle size. Such a modification ensures consistency of the particle size of the coffee grind, and thus a quality tasting product.

9. Claims 2-4, 11, 12, 15-17, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (US 2002/0027173 A1) in view of Enomoto (U.S. 5,307,733) and Tidland et al. (U.S. 5,958,494) as applied to Claims 1, 5-10, 13-14, 18-23, 25 and 27-28, above, and in further view of Ruiz-Avila (WO 00/01256).

With regard to Claims 2-4, 11, 12, 15-17, 24 and 26, Polifka in view of Enomoto, and Tidland et al., disclose a method for roasting, drying and grinding coffee beans, as discussed above. Since Polifka teaches grinding, it is obvious to a person having ordinary skill in the art that the particle size of the ground coffee beans depends on the resident time within the grinding chamber: a finer coffee bean requires a longer resident time while a coarser coffee bean requires a shorter resident time. Additionally, this also depends on the moisture content of the green coffee bean and the temperature used for roasting and drying. Since Polifka teaches discharging a foodstuff from the lower orifice of the conical chamber, it would have been obvious that the discharge requires collection in some kind of container.

Polifka in view of Enomoto, and Tidland et al., does not disclose further screening the discharged material for a specified particle size, collecting said material in a container and recycling said material not having the correct particle size back to the grinding chamber and further discharging said material using a rotary valve to discharge material into a container.

Ruiz-Avila teaches a method of comminuting (Figure 1A, Item 11; Page 4 Line 32 to Page 5, Line 3) and drying plant material using heated air (Page 4,

Line 11-13) that passes into a conical chamber (Figure 1A, Item 18) further comprising an exhaust pipe (Figure 1A, Item 19 and 20) and a rotary valve (Figure 2, Item 47) for discharging said material. Ruiz-Avila further discloses that said plant material will have a predetermined particle size and moisture content upon discharging from the system (Page 1, Line 21-24). Additionally, Ruiz-Avila teaches comminuting said plant material (Figure 2, Item 34) and subsequently aerosolizing said material in a conical chamber using cyclonic air (Figure 2, Item 38) and then drying in a separate chamber (Figure 2, Item 42); wherein oversized aerosolized particles that exceed the specified particle size exit the drying chamber through a sealed rotary valve (Figure 2, Item 49; Page 6, Line 14-16) and are subsequently re-sent through the feed for the purpose of decreasing the particle size (Page 6, Line 16-18). It should be noted that although Ruiz-Avila does not specify the range of moisture within the plant material or the size of the particle, these are physical properties that are dependent on the speed and temperature of the air as well as the resident time within the drying and grinding chamber. However, Ruiz-Avila does teach specifying a desired particle size and moisture content that should be attained for the finished product.

Therefore, it would have been obvious to a person having ordinary skill in the art to modify Polifka in view of Enomoto and Tidland et al. to include a sealed rotary valve for discharging and a means for selectively recycling through the process material of insufficient particle size, as taught by Ruiz-Avila for the

purpose of ensuring a ground material having a consistent texture. Recycling material of undesired particle size maximizes the efficiency of the grinding process. With such a modification, is obvious that recycling particles that do not meet the desired size limitations further aides in having a consistent particle size can improve the quality of the brewing of ground coffee bean. Depending on the type of coffee grind desired, the moisture and particle size can be selectively chosen and attained, as taught by Ruiz-Avila.

10. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polifka (US 2002/0027173 A1) in view of Enomoto (U.S. 5,307,733), Tidland et al. (U.S. 5,958,494) and Reeves et al. (U.S. 3,821,430) as applied to Claims 1, 3-11, 13-14, 16-24, 25 and 27-28, above, and further in view of Eichner (U.S. 2004/0142078 A1).

With regard to Claims 12 and 26, Polifka in view of Enomoto, Tidland et al., and Reeves et al. disclose a method for heating, drying and grinding coffee beans to a specified particle size using heated and compressed cyclonic air flow, as discussed above.

Polifka in view of Enomoto, Tidland and Reeves et al. does not disclose wherein the lower enclosure communicates with a rotary valve to permit the discharge of particulate product from the lower orifice of the conical chamber, in an air-tight manner.

Eichner discloses a method of roasting coffee wherein said coffee is roasted in a chamber and subsequently collected in a product container (Figure 1, Item 32). Eichner further discloses a valve that permits the discharge of the roasted coffee into said container (Figure 1, Item 30). Eichner further teaches the use of apertures at the outlet of the roasted coffee bean to release said coffee bean (Paragraph 0036; Figure 3, Item 18, Item 20). Additional Eichner discloses the use of a transfer valve (Figure 1, Item 30) which is connected through a pressure release valve (Paragraph 0038; Figure 1, Item PSV6) for the purpose of discharging roasted beans from the outlet into a finished product container (Paragraph 0037). Providing a pressure release ensures that the upon opening the valve, the product is discharged into a container. Nevertheless, on subsequent closure it is obvious that said valve has an air tight closure.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Polifka in view of Enomoto, Tidland and Reeves et al. to include an air-tight valve for the release of the ground coffee beans into a container, as taught by Eichner for the purpose of providing a means of discharging said coffee beans through the use of pressure release valves. Nevertheless, this also ensures an air-tight seal since it is known that pressure release valves allow for unidirectional flow of air, thus preventing air from entering the chamber. It is interpreted that is, therefore an air-tight valve. It is further obvious, however, that the choice of valves need not be only a rotary valve provided that the choice of valves allows discharging through the use of

pressure release. Additionally, such a modification increases the profitability of roasting, drying and grinding coffee beans since the invention as discloses allows for the continuous roasting, drying, grinding and discharging of coffee beans into containers, which increases throughput and production of ground coffee.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 6,260,479 B1 discloses a method of roasting coffee bean using air circulation and a conical chamber having an exhaust vent and a means of discharging said coffee. U.S. 3,476,711 discloses a process for preparing higher molecular weight powders wherein the process simultaneously heats the powder and grinds the material into a powder and subsequently dries the powder in a vortex dryer. U.S. 6,051,266 discloses a method for roasting coffee beans using a heated air fluidized bed and further comprising a discharging valve. U.S. 3,120,439 discloses a roasting and grinding process for the production of dry coffee extract and further comprising a collection chamber and a valve to control the discharge of the extract. U.S. 4,193,758 discloses a method for cooking, roasting and drying a product using a granular bed of heat transfer material in a rotating chamber and further comprises a recycle stream to continuously repeat the cycle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viren Thakur whose telephone number is (571)-272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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